

# 20th International Technical Conference on the Enhanced Safety of Vehicles



## Lyon, France June 18-21, 2007

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# Outline



**1. Safety Problems**

**2. Evolving Research Strategy**

**3. Intelligent Safety Technologies**

**4. Conclusions**

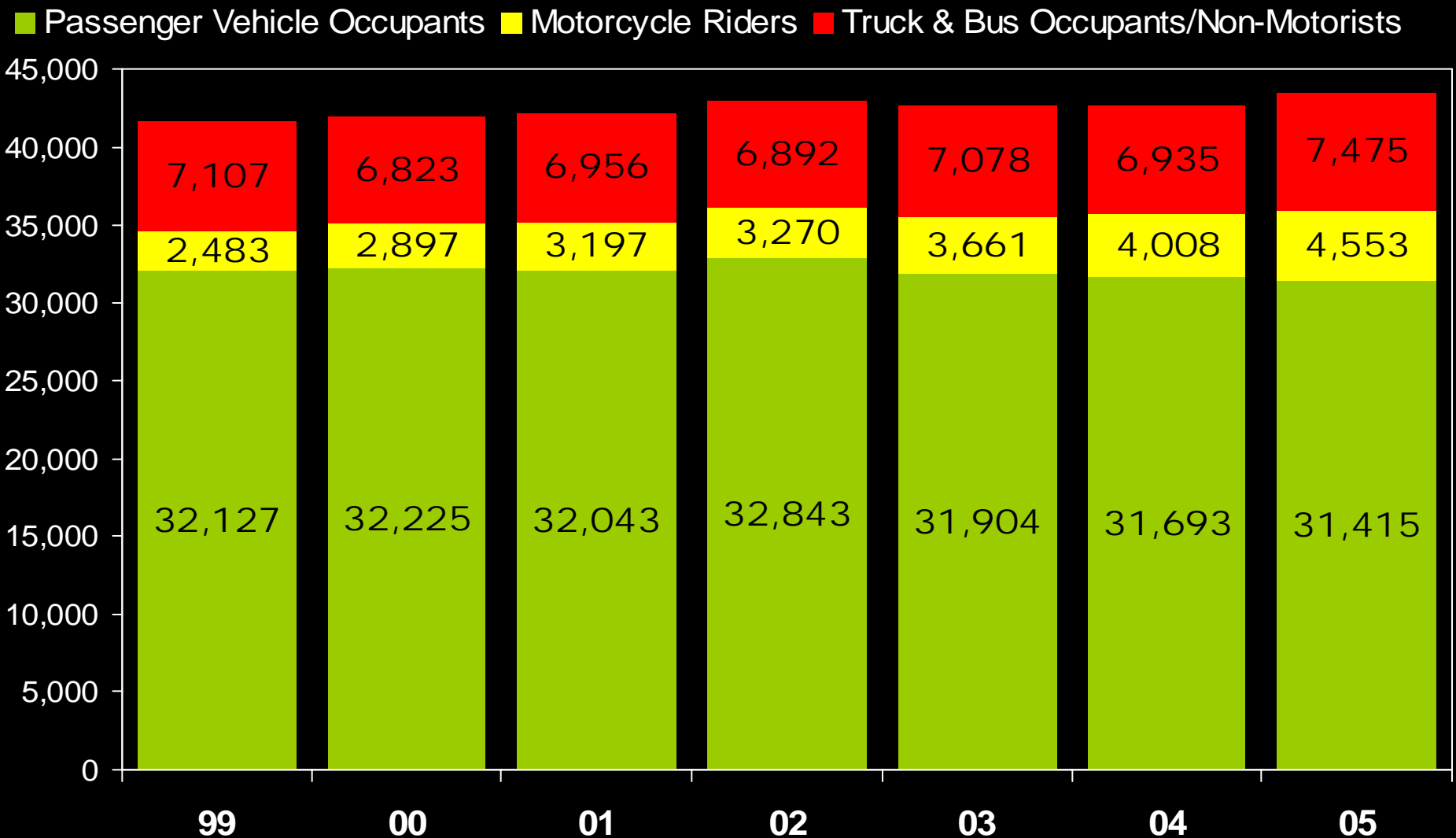
**5. Summary**

# Persons Killed and Rate 100M VMT



Source: 2005 FARS

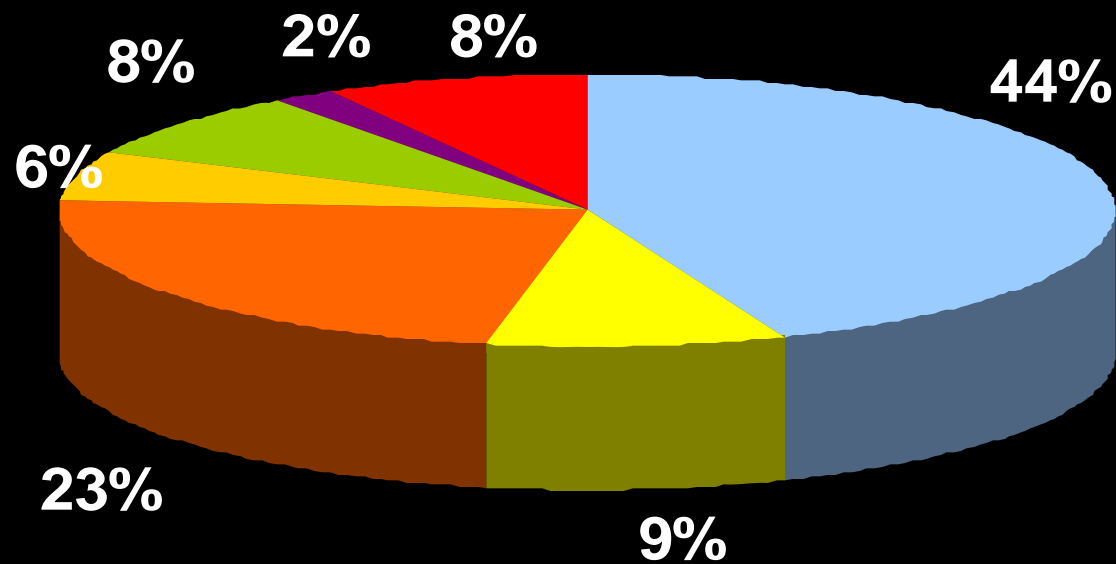
# Motor Vehicle Fatalities



# Crash Causal Factors



■ Recognition Errors      ■ Erratic Actions      ■ Decision Errors      ■ Drunk  
■ Drowsy      ■ Vehicle Defects      ■ Bad Surface Conditions



# Approach for Intelligent Technologies



- ❖ Performance Specifications
- ❖ Objective Test Procedures
- ❖ Field Operational Tests
- ❖ Independent Evaluation

# Importance of Crash Timelines

PREVENTION

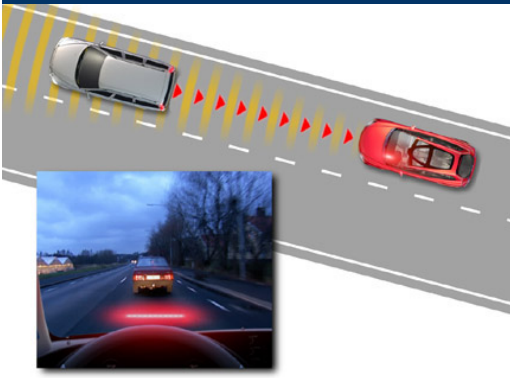
SEVERITY REDUCTION

INJURY MITIGATION

MEDICAL ATTENTION

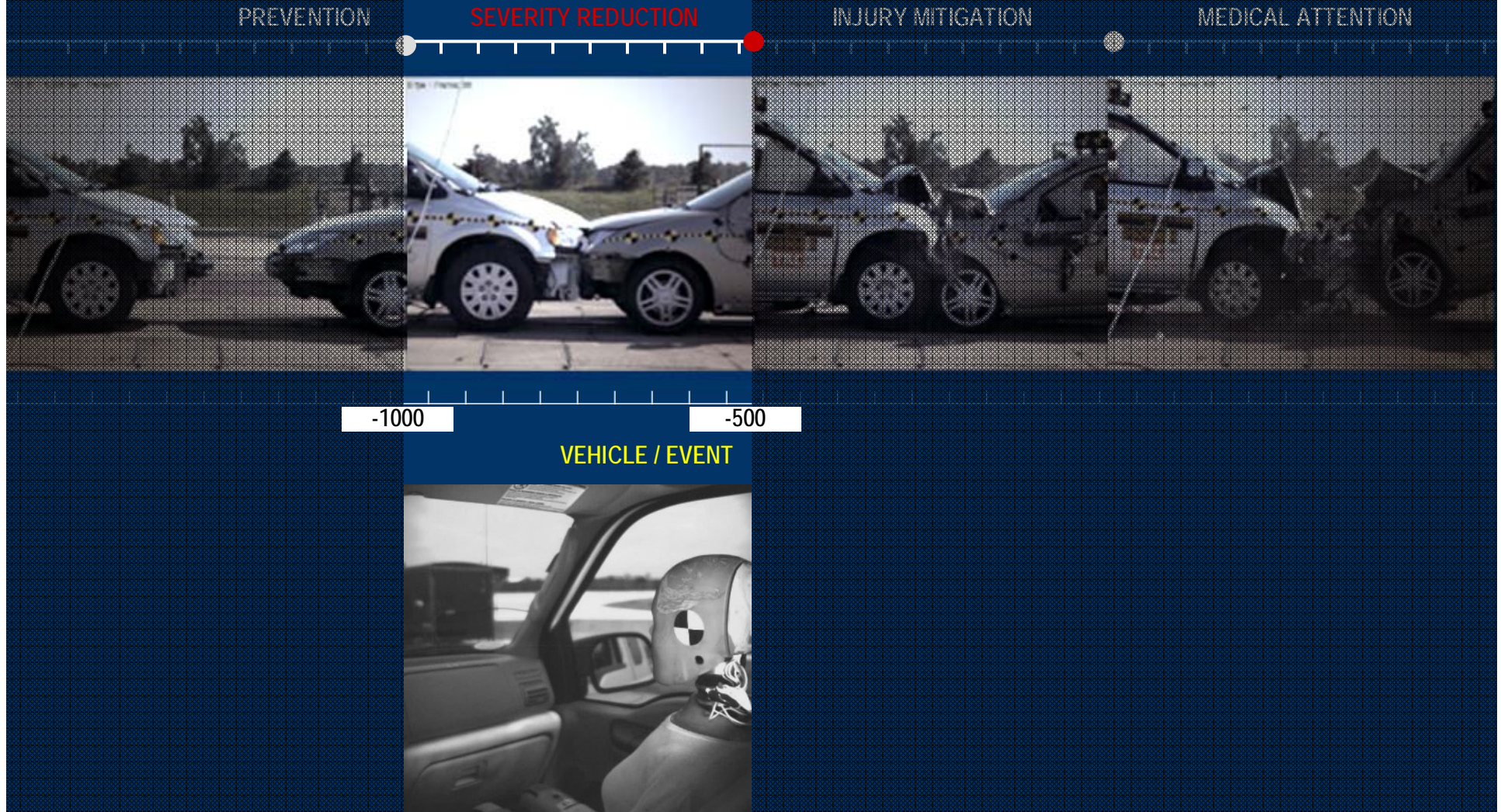


HUMAN / PRE - EVENT

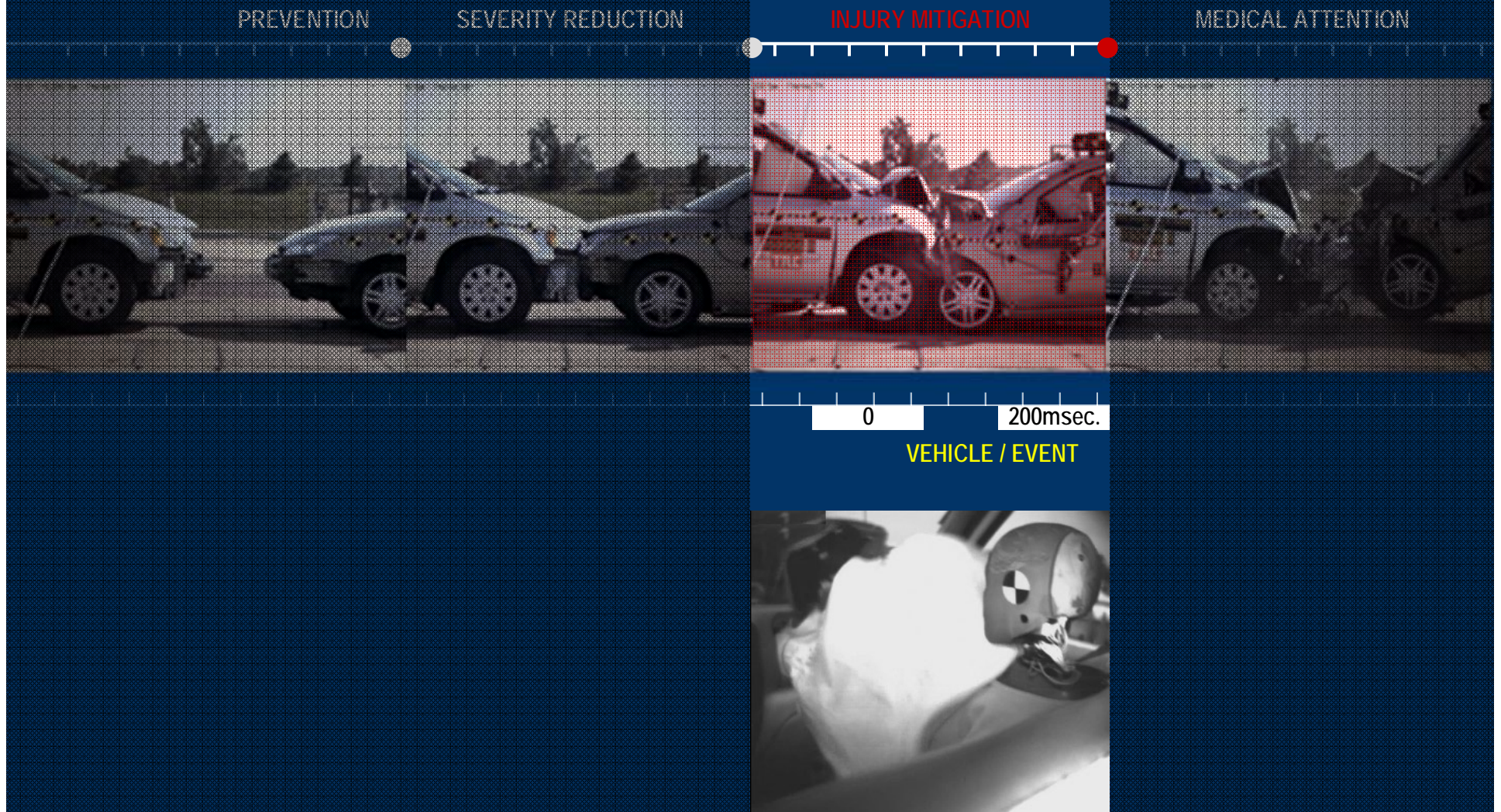


Volvo forward collision warning

# Importance of Crash Timelines



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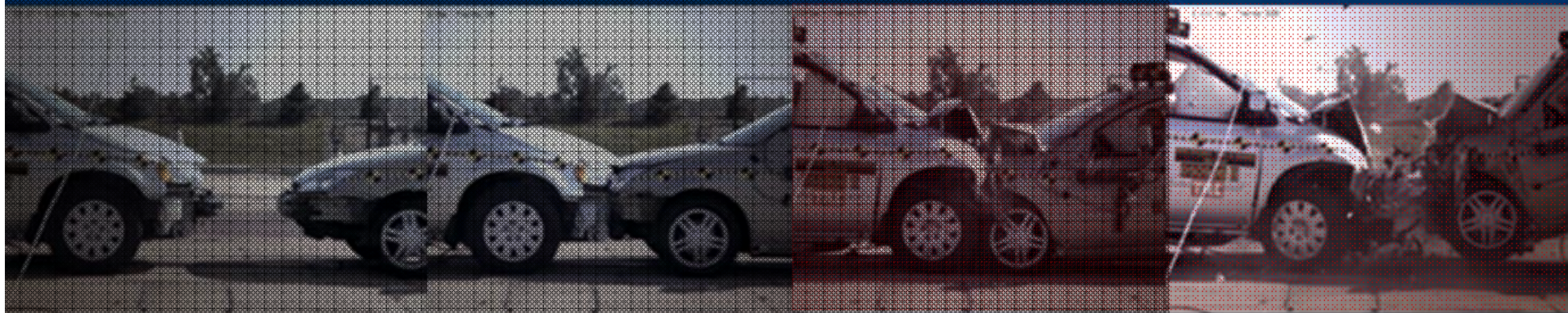
# Importance of Crash Timelines

PREVENTION

SEVERITY REDUCTION

INJURY MITIGATION

MEDICAL ATTENTION



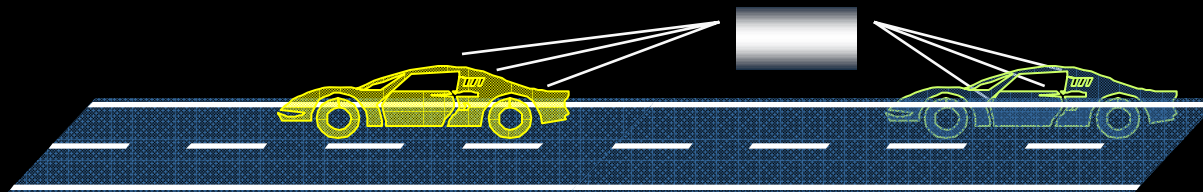
# Vehicle to Vehicle Communications Support



Emergency Electronic Brake Lights  
Forward Collision Warning  
Blind Spot Warning  
Lane Change Warning  
Do Not Pass/On-Coming Crash Warning  
Intersection Movement Assist



# Connecting Vehicles and Infrastructure



***Creating an “enabling  
communication infrastructure”***



# The Challenge



How do we know if these  
systems, and others,  
improve or degrade safety?

## Driver Assistance System Assessment Process

**Describe**

System Performance

**Analyze**

Supporting Data

**Perform**

Objective Tests

**Estimate**

Benefits

# Vehicle Safety Priorities



**For the period 2007-2010, NHTSA priorities:**

- ❖ Rollover Prevention
- ❖ Ejection Mitigation
- ❖ Protection in Rollover Crashes
- ❖ Vehicle Crash Compatibility
- ❖ Back-Over Protection for Children

# Significant Rulemaking and Support Activities



- ❖ Truck Tractor Stopping Distance
- ❖ Electronic Stability Control
- ❖ Event Data Recorders
- ❖ Occupant Crash Protection – 5% Female
- ❖ Side impact Protection

# Conclusions



- ❖ Integrated Safety has enormous safety potential
- ❖ Advanced technologies offer new opportunities
- ❖ Need to optimize the benefits at each step
- ❖ Make sure there are no unintended consequences

# Summary



- ❖ Emerging advanced technologies have a high potential to meet U.S. safety needs
- ❖ Accelerating the introduction of technologies that are truly effective will provide significant safety benefits.
- ❖ NHTSA research is aimed at ensuring that emerging technologies are deployed to maximize safety capability.
- ❖ Research results will support Rulemaking, consumer information programs, ratings, and other program.